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SUBSTITUTE SPECIFICATION

DISPLAY DEVICE

BACKGROUND OF THE INVENTION

The present invention relates to a display device, and, more particularly, the invention relates to a display device having functional films to be provided in various optical elements, such as surface-processed films, colored films, and tint-controlled films, which exhibit improved characteristics.

In various display devices, optical members provided with various functional films are used. Examples include surface coating thin films or tackifiers of surface films in a direct-view cathode ray tube (CRT), a projection tube (PRT), a field emission display (FED), a plasma display panel (PDP), etc., luminescent layers of various optical members constituting illuminating light sources of a liquid crystal display (LCD) or organic electroluminescent display (organic EL display: OLED), and color purity enhancing filters thereof. Various dyes or pigments are used in functional films constituting these optical members.

Dyes or pigments have characteristic features and also defects. That is, since dyes are readily soluble in solvents and are easy to handle, they are easy with respect to addition and processing as a functional material. However, the dyes are liable to cause dissolution or bleeding due to external causes and are also poor in light fastness. On the other hand, since the pigments are only sparingly soluble in solvents, they are free from the foregoing dissolution or bleeding and have good light fastness. However, for the sake of obtaining optical functional films (optical thin films) having good characteristics, in pigments, it is difficult to ultrafinely granulate or highly disperse them and to make the grain size distribution uniform and maintain stability.

In display devices requiring light fastness, a thin film using an organic pigment is used. However, because of the foregoing problems, there are involved problems in